

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-024501**Date Inspected:** 20-Jun-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Jobsite**CWI Name:** William Sherwood**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** SAS OBG**Summary of Items Observed:**

Quality Assurance inspector (QA) Douglas Frey was at the American Bridge/Fluor (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

1. 9W PP76 W4 Lifting Lug Holes #2 and 4
2. 10W PP92 W3 Lifting Lug Holes #1 and 3
3. 7/8" Stud Welding (Bike Path)
4. 7E PP53 E1 Drip Rails
5. 10E PP90 E1 Drip Rails
6. Lifting Lug Lamination Scan (UT)
7. North Tower Splice Plate #166 @Elevation 114 meters

1. 9W PP76 W4 Lifting Lug Holes #2 and 4

The QA Inspector made periodic observations of ABF welder Fred Kaddu performing Shielded Metal Arc Welding (SMAW) in the 4G overhead position on Lifting Lug Holes (LLH) #2 and 4 located at 9W PP76 W4. The QA Inspector observed the QC Inspector John Pagliero as being present in order to monitor the progress and ensure the welding parameters were in compliance pertaining to ABF-WPS-D15-1110A Rev. 1. The work was completed on this date and the QA Inspector noted that the work appeared to be in general conformance with the contract documents.

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2. 10W PP92 W3 Lifting Lug Holes #1 and 3

The QA Inspector made periodic observations of ABF welder Darcel Jackson performing SMAW in the 4G overhead position on LLH's #1 and 3 located at 10W PP92 W3. The QA Inspector observed the QC Inspector John Pagliero as being present in order to monitor the progress and ensure the welding parameters were in compliance pertaining to ABF-WPS-D15-1110A Rev. 1. The work is in progress and the QA Inspector noted that the work appeared to be in general conformance with the contract documents.

3. 7/8" Stud Welding (Bike Path)

The QA Inspector continuously observed ABF operator Julian Paulk performing Stud Welding in the down hand position of 7/8 studs at the following locations; 7E PP59, 7E PP61, 8E PP63, 8E PP65, 8E PP67 and 8E PP55. The QA Inspector observed the QC Inspector William Sherwood as being present in order to monitor the progress and ensure the welding parameters were in compliance with ABF-WPS-D15-5001 Stud. Upon placement of each stud, the weld was visually inspected for complete fusion (360 degrees) at the base. It was noted by the QA Inspector that the NE stud at PP61 and the SE stud at PP65 appeared to have lack of fusion and were removed. The QA Inspector observed the QC Inspector perform Magnetic Particle Testing on the placement area and upon approval the studs were replaced, re-inspected and found to be acceptable. The work was completed on this date and the QA Inspector noted that the work appeared to be in general conformance with the contract documents.

4. 7E PP53 E1 Drip Rails

The QA Inspector randomly observed ABF welder Rick Clayborn performing SMAW in the 2G horizontal position on Drip Rails at 7E PP53 E1 and 7E PP52 E1. The QA Inspector observed the QC Inspector William Sherwood as being present in order to monitor the progress and ensure the welding parameters were in compliance with ABF-WPS-D15-F1200A. The work is in progress and the QA Inspector noted that the work appeared to be in general conformance with the contract documents.

5. 10E PP90 E1 Drip Rails

The QA Inspector randomly observed ABF welder Fred Kaddu performing SMAW in the 2G horizontal position on Drip Rails at 10E PP90 E1 and 10E PP92 E1. The QA Inspector observed the QC Inspector Fred Von Hoff as being present in order to monitor the progress and ensure the welding parameters were in compliance with ABF-WPS-D15-F1200A. The work is in progress and the QA Inspector noted that the work appeared to be in general conformance with the contract documents.

6. Lifting Lug Lamination Scan (UT)

The QA Inspector performed straight beam Ultrasonic Testing on Lifting Lugs on 6/15/2011 and 6/16/2011 while inadvertently omitting the locations on the reports for those dates. A complete scan of the area where the Lugs were removed was done at #4 1W PP8.5 W3, #4 1W PP9.5 W3, #2 1W PP8.5 W4 and #2 1W PP9.5 W4. The areas where the Lugs were removed and the remaining Lugs in each of the above named areas were scanned where accessible and were found to be free of indications and acceptable. The QA Inspector performed straight beam UT on two random lifting lugs in each segment at #1 2W PP15 W3, #4 2W PP15 W4, #1 3W PP22 W3, #2 3W PP22

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W4, #3 4W PP27 W3, #3 4W PP27 W4 and #3 5W PP31 W3. The work was found to be free of indications and acceptable. The scan was performed in the defined UT area on drawings ZPM-04-01-001216 to ZPM-04-01-001219 where accessible. The work is in progress and appeared to be in general conformance with submittal 1635 Rev.00.

7. North Tower Splice Plate #166 @Elevation 114 meters

The QA Inspector randomly observed ABF welder Wen Han Yu continuing to perform production welding on the top half of the lower splice plate using Flux Cored Arc Welding (FCAW) process with 1.8mm diameter E71T-8 wire electrode implementing Caltrans approved (WPS) ABF-WPS-D15-F2200-3. The QA Inspector noted the welding in the 3F (vertical) fillet position of the splice plate to interior corner closure plate of the tower shaft. The QA Inspector observed ABF personnel using a propylene gas torch to preheat the plates to be welded prior to welding. The QA Inspector observed QC Inspector Steve Jensen using a Fluke infra-red temperature gauge to verify the preheat temperature of more than 300°F. The QA Inspector performed a verification of the welding parameters and observed 272 amperes and 21.7 volts with a travel speed of 100 mm per minute with equivalent heat input of 3.54 KJ per mm. The work is in progress and the QA Inspector noted that the work appeared to be in general conformance with the contract documents.

Summary of Conversations:

At the beginning the shift the QA Inspector met with QC Inspector William Sherwood and discussed the welders assignments and locations for the shift to include pending issues, ongoing work and required testing.



Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Frey,Doug

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer